

Notice of Allowability

Application No.

09/390,846

Applicant(s)

KOK ET AL.

Examiner

N. M. Minnifield

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/1/06; 1/22/07.
2. ☒ The allowed claim(s) is/are 1, 2, 11 and 20; now renumbered 1-4 respectively.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 08676882.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☐ Notice of Informal Patent Application
- ☒ Interview Summary (PTO-413), Paper No./Mail Date attached
- ☒ Examiner's Amendment/Comment
- ☐ Examiner's Statement of Reasons for Allowance
- ☐ Other _____

EXAMINER'S AMENDMENT

1. Applicants' amendment filed November 1, 2006 is acknowledged and has been entered. Claims 3-10, 12-19 and 21-26 have been canceled. Claims 1 and 11 have been amended. Claims 1, 2, 11 and 20 are now pending in the present application. All rejections have been withdrawn in view of Applicants' amendment to the claims, examiner's amendment set forth below and/or comments.

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with William Blackstone, 29772 on January 22, 2007.

3. The application has been amended as follows:

1. (Currently amended): A protein expressed *in vitro*, comprising:

an isolated and purified lactate dehydrogenase protein, wherein said protein is an immunogenic protein found intracellularly in *Eimeria* having a molecular weight of about 37kD measured by sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS PAGE) and comprising the amino acid sequence shown in SEQ ID NO: 2.

2. (Previously presented): The protein according to claim 1, wherein the *Eimeria* species is *Eimeria acervulina*.

3-10. (Canceled).

11. (Previously presented): A vaccine effective for the protection of poultry against Coccidiosis comprising:

an immunologically effective amount of an isolated and purified protein according to claim 1 and a pharmaceutically acceptable carrier.

12-19. (Canceled).

20. (Previously presented): The vaccine of claim 11, further comprising an adjuvant.

21-26. (Canceled).

4. The following is an examiner's statement of reasons for allowance: The closest prior art (Shirley et al, Parasitology, 1975, 71:369-376; Kucera, Folia Parasitologica, 1989, 36/4:295-299; Nakamura et al, J. Vet. Med. Sci., 1991, 53/6:1101-1103) does not teach or suggest the specifically claimed isolated and purified lactate dehydrogenase protein found intracellularly in *Eimeria* that is immunogenic, has a molecular weight of about 37kD as measured by sodium dodecyl sulfate polyacrylamide gel electrophoresis and comprises the amino acid sequence shown in SEQ ID NO: 2. The closest prior art (see above) does teach or

suggest a vaccine comprising the claimed protein and a pharmaceutically acceptable carrier.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

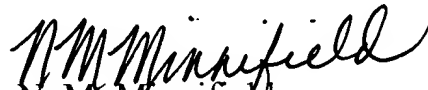
5. Claims 1, 2, 11 and 20 have been allowed and renumbered 1-4 respectively.
6. The Examiner has accepted the drawings filed on November 25, 2003.
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. M. Minnifield whose telephone number is 571-272-0860. The examiner can normally be reached on M-F (8:00-5:30) Second Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Siew can be reached on 571-272-0787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system,

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contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


N. M. Minnifield
Primary Examiner
Art Unit 1645

NMM

January 23, 2007

CLEAN COPY OF ALLOWED CLAIMS

1. A protein expressed *in vitro*,
comprising:

an isolated and purified lactate dehydrogenase protein, wherein said protein is an immunogenic protein found intracellularly in *Eimeria* having a molecular weight of about 37kD measured by sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS PAGE) and comprising the amino acid sequence shown in SEQ ID NO: 2.

2. The protein according to claim 1, wherein the *Eimeria* species is *Eimeria acervulina*.

11. A vaccine effective for the protection of poultry against Coccidiosis
comprising:

an immunologically effective amount of an isolated and purified protein according to claim 1 and a pharmaceutically acceptable carrier.

20. The vaccine of claim 11, further comprising an adjuvant.